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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,936	12/14/2004	Kiyotaka Kobayashi	P26391	8652

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EXAMINER

ZEWDU, MELESS NMN

ART UNIT PAPER NUMBER

2617

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/516,936	Applicant(s) KOBAYASHI ET AL.	
	Examiner Meless N. Zewdu	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is in response to the communication filed on 3/16/06.
2. Claims 1-16 have been cancelled in this amendment.
3. New claims 17-31 are pending in this action.
4. This action is final.

Claim Objections

Claims 17-31 are objected to because of the following informalities: the phrase, "modulation signal" ha obscured the clarity of the claims. Examiner suggests changing the phrase to – **modulated signal**. Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory

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double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 17-31 are provisionally rejected on the ground of nonstatutory double patenting over claims 1-19 of copending Application No. 10/704,653. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: the difference between the claims in the instant application and the copending application is that the claims in the instant application are broader than the claims in the copending application.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-22 and 24-20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ling et al. (Ling) (US 7,006,848 B2) in view of Medvedev et al.

(Medvedev) (US 6,862,271).

As per claim 25: Ling discloses a wireless communication method for a communication system including multi antennas (see figs. 1-2B; col. 3, lines 38-54), the communication method comprising:

estimating a reception electric field strength of the communication system (see abstract; col. 1, line 64-col. 2, line 8), wherein SNR is considered, unless excluded by applicant, as the reception electric field;

calculating an eigenvalue corresponding to a channel matrix of channel estimation values (see col. 28, lines 28-50), wherein the processor 524 is capable of providing/calculating eigenvalue corresponding to a channel matrix;

controlling a predetermined parameter based on the reception electric field strength of the communication system (see fig. 5, element 170; col. 17, line 58-col. 18, line 11; col. 31, lines 18-42; col. 32, lines 6-33); (see abstract), wherein SNR is considered, unless excluded by applicant, as the reception electric field;

transmitting a signal processed with the determined parameter and based on the eigenvalue (see claim 19; col. 28, lines 42-50). But, Ling does not explicitly teach about calculating an effective reception electric field strength which comprise a reception electric field strength configured for demodulation processing, as claimed by applicant.

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However, in a related field of endeavor, Medvedev teaches about a MIMO (multiple input-multiple output) communication system, wherein a channel response matrix is used to derive eigenvalues which are in turn used to determine the effective SNR (effective electric field strength) (see col. 3, lines 5-25; col. 12, line 6-45; col. 21, lines 48-61). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the teaching of Ling with that of Medvedev for the advantage of providing a transmission scheme that may be good or near optimum performance for a specific range of operating conditions which may be quantified by an operating (effective) signal-to-noise ratio (SNR) (see col. 2, lines 61-64).

As per claim 26: Ling teaches a communication method, wherein the controlling comprises controlling a modulation scheme as the control of the predetermined parameter (see paragraph 0053) and the transmitting comprises modulating a signal with the controlled modulation scheme (see col. 28, lines 421-51).

As per claim 27: Ling teaches discloses a communication method, wherein the controlling comprises selecting a transmission antenna as the control of the predetermined parameter and the transmitting comprises transmitting a signal from the selected transmission antenna (see col. 9, lines 60-67).

As per claim 28: Ling teaches a communication method, wherein the controlling comprises controlling transmission power as the control of the predetermined parameter and the transmitting comprises transmitting a signal amplified to the controlled transmission power (see col. 28, line 62-col. 29, line 50; col. 30, lines 15-24).

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As per claim 29: Ling teaches a communication method, wherein the controlling comprises determining a communication scheme from either MIMO communication or space time coding communication as the control of the predetermined parameter and the transmitting comprises transmitting a signal in the determined communications scheme (see entire document, particularly, abstract; col. 1, line 64-col. 2, line 45).

As per claim 30: Ling teaches a communication method, wherein the controlling comprises controlling a coding method as the control of the predetermined parameter and the transmitting comprises transmitting a signal encoded in the controlled coding method (see col. 4, lines 42-col. 5, line 25).

As per claim 17: the feature of claim 17 is similar to the feature of claim 25, except claim 17 is broader than claim 25 and is directed to an apparatus for performing the method steps of claim 25. Since the apparatus of claim 17 is required to perform the steps claim 25, claim 17 is rejected on the same ground and motivation as claim 25.

As per claim 18: the feature of claim 18 is similar to the feature of claim 26. Hence, claim 18 is rejected on the same ground and motivation as claim 26.

As per claim 19: the feature of claim 19 is similar to the feature of claim 27. Hence, claim 19 is rejected on the same ground and motivation as claim 27.

As per claim 20: the feature of claim 20 is similar to the feature of claim 28. Hence, claim 20 is rejected on the same ground and motivation as claim 28.

As per claim 21: Ling teaches a wireless communication apparatus, wherein said controller comprises a communication scheme controller that determines a number of

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said modulation signals and outputs determined information as the control signal (see col. 1, line 64-col. 2, line 45; col. 7, line 52-col. 8, line 50).

As per claim 22: the feature of claim 22 is similar to the feature of claim 30. Hence, claim 22 is rejected on the same ground and motivation as claim 30.

As per claim 24: the feature of claim 24 is similar to the feature of claim 25. Hence, claim 24 is rejected on the same ground and motivation as claim 25.

Claims 23 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references applied to claims 17 and 25 above, and further in view of Zhang (US 6,369,758 B1). For examination purpose, claim 31 is considered first.

As per claim 31: but, Ling does not explicitly teach a communication method, wherein the controlling comprises controlling antenna characteristics as the control of the predetermined parameter and the transmitting comprises transmitting a signal with the controlled antenna characteristics, as claimed by applicant. However, in a related field of endeavor, Zhang teaches about an adaptive antenna array for a mobile communication wherein the adaptive antenna continuously tracks its environment on an ongoing basis so that it can change its steering methodology if necessary when the interference characteristics and antenna speed change (see entire document, particularly col. 16, lines 20-67, specifically, lines 64-67). Examiner considers the change in the adaptive antenna steering as antenna characteristics. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Zhang for the advantage of

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providing an adaptive antenna that can track and changes it steering technique when interference characteristics and its speed change.

As per claim 23: the feature of claim 23 is similar to that of claim 31. Hence, claim 23 is rejected on the same ground and motivation as claim 23.

Response to Arguments

Applicant's arguments with respect to claims 17-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N. Zewdu whose telephone number is (571) 272-7873. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Banks-Harold, Marsha can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Meless Zewdu

M. Z.

Examiner

02 June 2006.


CHARLES APPIAH
PRIMARY EXAMINER